



# 10FP4-A

## CATHODE-RAY TUBE

**10FP4-A**  
ET-T1143  
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10-INCH ROUND, GLASS  
FOCUS—MAGNETIC  
DEFLECTION—MAGNETIC  
50-DEGREE DEFLECTION ANGLE

9 $\frac{1}{8}$ - BY 6 $\frac{3}{4}$ -INCH PICTURE SIZE  
FACEPLATE—SPHERICAL, GRAY  
EXTERNAL CONDUCTIVE COATING  
ALUMINIZED SCREEN

### DESCRIPTION AND RATING

The 10FP4-A is a magnetic-focus and deflection, direct-view all-glass picture tube which provides a 9 $\frac{1}{8}$ - by 6 $\frac{3}{4}$ -inch picture for television applications. The electron gun does not require an external ion trap magnet. Other features of this tube include a high-quality gray faceplate which increases picture contrast and detail under high ambient light conditions, and a reflective aluminized screen to increase light output and prevent ion-spot blemish. An external conductive coating serves as a filter capacitor when grounded.

### GENERAL

#### ELECTRICAL

|                                                 |               |         |
|-------------------------------------------------|---------------|---------|
| Heater Voltage .....                            | 6.3           | Volts   |
| Heater Current .....                            | 0.6 $\pm$ 10% | Amperes |
| Focusing Method—Magnetic                        |               |         |
| Deflecting Method—Magnetic                      |               |         |
| Deflection Angle, approximate .....             | 50            | Degrees |
| Direct Interelectrode Capacitances, approximate |               |         |
| Cathode to All Other Electrodes .....           | 5             | $\mu$ f |
| Grid-No. 1 to All Other Electrodes .....        | 6             | $\mu$ f |
| External Conductive Coating to Anode            |               |         |
| Maximum .....                                   | 2500          | $\mu$ f |
| Minimum .....                                   | 500           | $\mu$ f |

#### OPTICAL

|                                                 |    |         |
|-------------------------------------------------|----|---------|
| Phosphor Number—P4, Sulfide Type                |    |         |
| Fluorescent Color—White                         |    |         |
| Phosphorescent Color—White                      |    |         |
| Persistence—Short                               |    |         |
| Faceplate—Gray                                  |    |         |
| Light Transmission at Center, approximate ..... | 74 | Percent |

GENERAL  ELECTRIC

Supersedes ETR-111, dated 4-52

**MECHANICAL**

|                                          |                                 |        |
|------------------------------------------|---------------------------------|--------|
| Over-all Length . . . . .                | $17\frac{5}{8} \pm \frac{3}{8}$ | Inches |
| Greatest Bulb Diameter . . . . .         | $10\frac{1}{2} \pm \frac{1}{8}$ | Inches |
| Minimum Useful Screen Diameter . . . . . | $9\frac{1}{8}$                  | Inches |
| Neck Length . . . . .                    | $8\frac{3}{16}$                 | Inches |

Bulb Number, ASA Designation—J84C

Bulb Contact—Recessed Small-cavity Cap, JETEC No. J1-21

Base—Small-shell Duodecal 5-Pin, JETEC No. B5-57

Basing, JETEC Designation—12N

Bulb Contact Alignment

Anode Contact Aligns with Pin No. 3 Position  $\pm 30$  Degrees

Mounting Position—Any

Net Weight, approximate . . . . .  $10\frac{1}{2}$  Pounds**MAXIMUM RATINGS****DESIGN-CENTER VALUES\***

|                               |            |          |
|-------------------------------|------------|----------|
| Anode Voltage† . . . . .      | 12,000 Max | Volts DC |
| Grid-No. 2 Voltage . . . . .  | 410 Max    | Volts DC |
| Grid-No. 1 Voltage            |            |          |
| Negative-Bias Value . . . . . | 125 Max    | Volts DC |
| Positive-Bias Value . . . . . | 0 Max      | Volts DC |
| Positive-Peak Value . . . . . | 2 Max      | Volts    |

Peak Heater-Cathode Voltage‡

Heater Negative with Respect to Cathode

During Warm-up Period not to Exceed 15 Seconds . . . . . 410 Max Volts

After Equipment Warm-up Period . . . . . 140 Max Volts

Heater Positive with Respect to Cathode . . . . . 140 Max Volts

**TYPICAL OPERATING CONDITIONS**

|                                               |            |                 |
|-----------------------------------------------|------------|-----------------|
| Anode Voltage§ . . . . .                      | 11,000     | Volts DC        |
| Grid-No. 2 Voltage . . . . .                  | 300        | Volts DC        |
| Grid-No. 1 Voltage¶ . . . . .                 | —28 to —72 | Volts DC        |
| Focusing-Coil Current▲, approximate . . . . . | 100        | Milliamperes DC |

**MAXIMUM CIRCUIT VALUES**

Grid-No. 1 Circuit Resistance . . . . . 1.5 Max Megohms

\* The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode-ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.

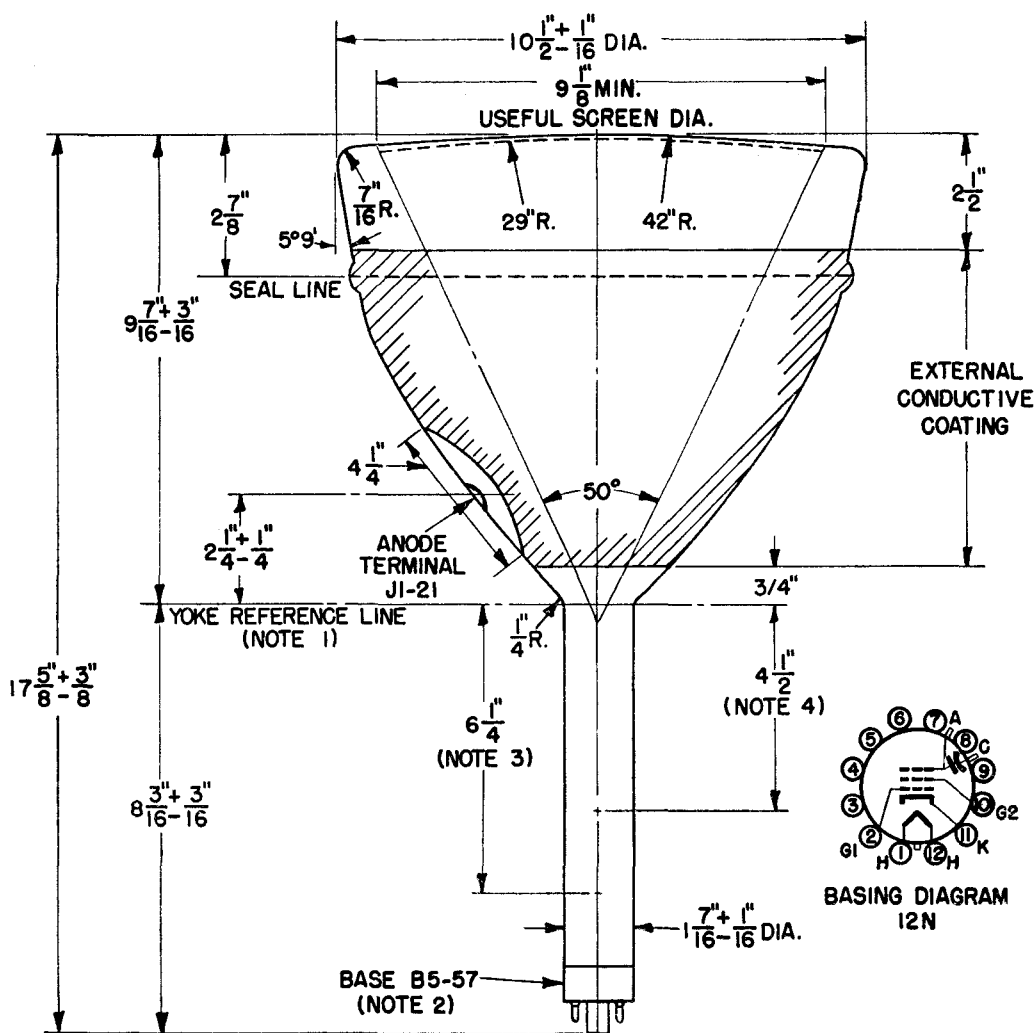
† Anode and grid-No. 3 which are connected together within the tube are referred to herein as anode.

‡ Cathode should be returned to one side or to the midtap of the heater transformer winding.

§ Brightness and focus quality decrease with decreasing anode voltage. In general, the anode voltage should not be less than 8,000 volts.

π For visual extinction of focused raster.

▲ For RETMA focusing coil No. 109 with distance from the yoke-reference-line to center-of-air-gap equal to 4½-inches.



#### NOTES:

1. REFERENCE LINE IS DETERMINED BY THE PLANE OF THE UPPER EDGE OF THE REFERENCE-LINE GAGE (RETMA NO. 112) WHEN THE GAGE IS RESTING ON THE CONE.
2. ANODE TERMINAL ALIGNS WITH PIN-NO. 3 POSITION  $\pm 30$  DEGREES.
3. APPROXIMATE POSITION OF ION-TRAP MAGNET, APPLIES ONLY TO 10BP4 AND 10BP4-A.
4. RECOMMENDED POSITION FOR CENTER OF FOCUSING FIELD.